



*Agricultural Research Institute, Pusa*

**Agricultural Implements and Machinery at Pusa  
Part II**

**Harvesting and Threshing Implements and  
Machinery**

BY

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1929

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# AGRICULTURAL IMPLEMENTS AND MACHINERY AT PUSA, PART II.

## HARVESTING AND THRESHING IMPLEMENTS AND MACHINERY.

*(Received for publication on 26th November, 1928.)*

### (a) Harvesting Machinery.

In India harvesting is practically all done by small hand sickles. At Pusa this can be done on contract from Rs. 3 to Rs. 3-8-0 per acre and includes cutting, tying and stooking. In tracts like the Punjab Canal Colonies, labour is much scarcer and the time is probably not far off when mechanical means will have to be resorted to for harvesting. The following machines have been tested at Pusa and have been found very successful but considerably more costly than local rates for hand work :—

1. The Rajah Reaper.
2. Thistle Reaper.
3. Albion Reaper.
4. Albion Reaper and Mower.
5. Albion Self-Binder and Reaper.

### THE RAJAH REAPER.

(Plate I.)

The "Rajah" is a simple back-delivery machine. It is strongly made and has a wheel under the draft pole to facilitate working in irrigated land where there are small bunds. It will cut about 6 acres of cereals per day with two pairs of bullocks used alternately. The machine is sold by Messrs. Volkart Bros., Lyallpur ; price, Rs. 395.

**ALBION SELF-BINDER.**

(Plates II and III.)

The Albion Self-binder is a strong English made machine. It has done good work at Pusa, but the cost of twine is rather high. It must be pulled by a tractor as bullocks are too slow to give good results. The costs of work with the self-binder were :—

	Rs.
Cost of working tractor per acre . . . . .	2-341
Cost of twine per acre . . . . .	3-681
Cost of manual labour employed for stocking sheaf including men on the binder . . . . .	0-387
<b>Total per acre . . . . .</b>	<b>6-309</b>

This does not include depreciation on tractor and binder or interest on capital.

Best day's work, 10 acres ; average per day for the season, 7 acres.

**(b) Threshing Machinery.**

Threshing machinery at present is very little used in India, but it is difficult to see how the present conditions can continue in a wheat-growing tract where the price of labour is steadily increasing. The design of threshing machinery for India is a subject which requires a considerable amount of work. Conditions are different for most parts of the country and the wheat grain is hard, dry and brittle. Very high temperatures are experienced at threshing time when machinery is out in the open and subject to the full power of the sun. There will undoubtedly be a big opening for threshing machines when designers have produced the requisite article. Standard machines at present in the market cannot be said to be thoroughly satisfactory. Among the points to be considered are :—

- (a) Indian wheat is exported with a high content of impurities.
- (b) A complete self-contained set is required, including a portable power unit.
- (c) Contractors might adopt a suitable combination if available, doing threshing by piece work as is done in other countries.
- (d) While the bullocks are treading out the grains on the threshing floor, they also manufacture *bhusa*. *Bhusa* is not simply cut straw ; it is the straw thoroughly smashed and broken up into small pieces. The *bhusa* problem has also to be considered.
- (e) Danger of fire must be considered ; straw blowers are somewhat risky in high temperatures.

**MARSHALLS' 4'-6" THRESHING MACHINE.**

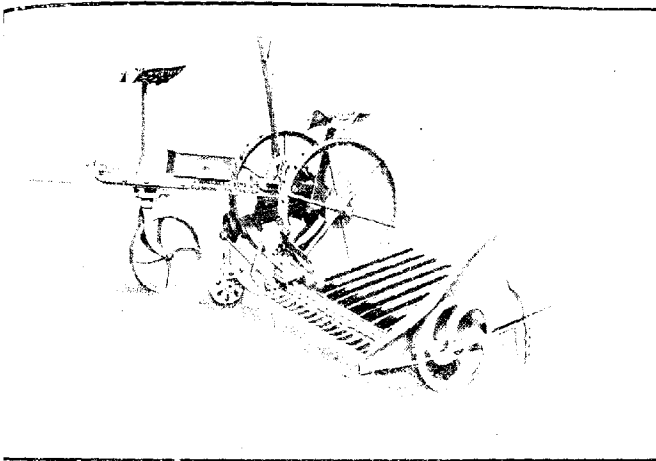
(Plate IV.)

At Pusa the threshing problem is comparatively simple, as the chief cereal is oats. The standard machine here is a 4 ft. 6 inch-drum Marshalls' threshing machine with sheaf elevator and straw elevator. The sheaf elevator is of considerable practical importance as local labour is not strong enough to throw sheafs up to a high machine. Four hundred maunds of cleaned oats can be produced in a day. The price of the machine is Rs. 6,500.



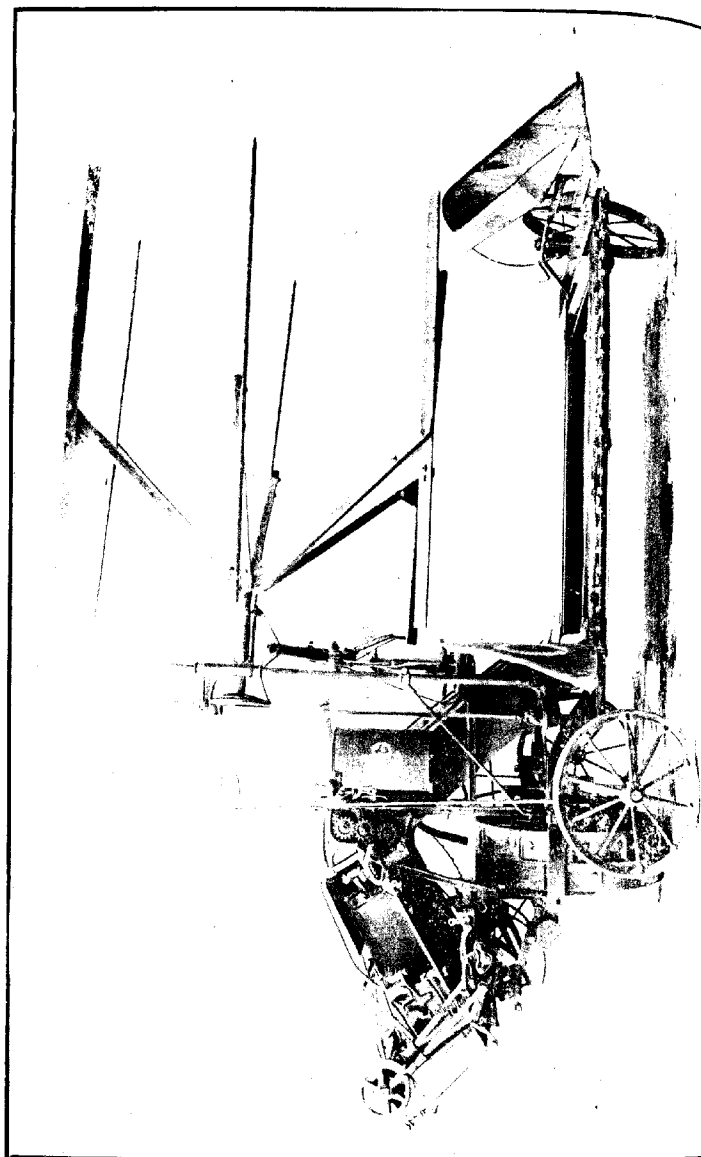


PLATE L



The Royal Reaper.

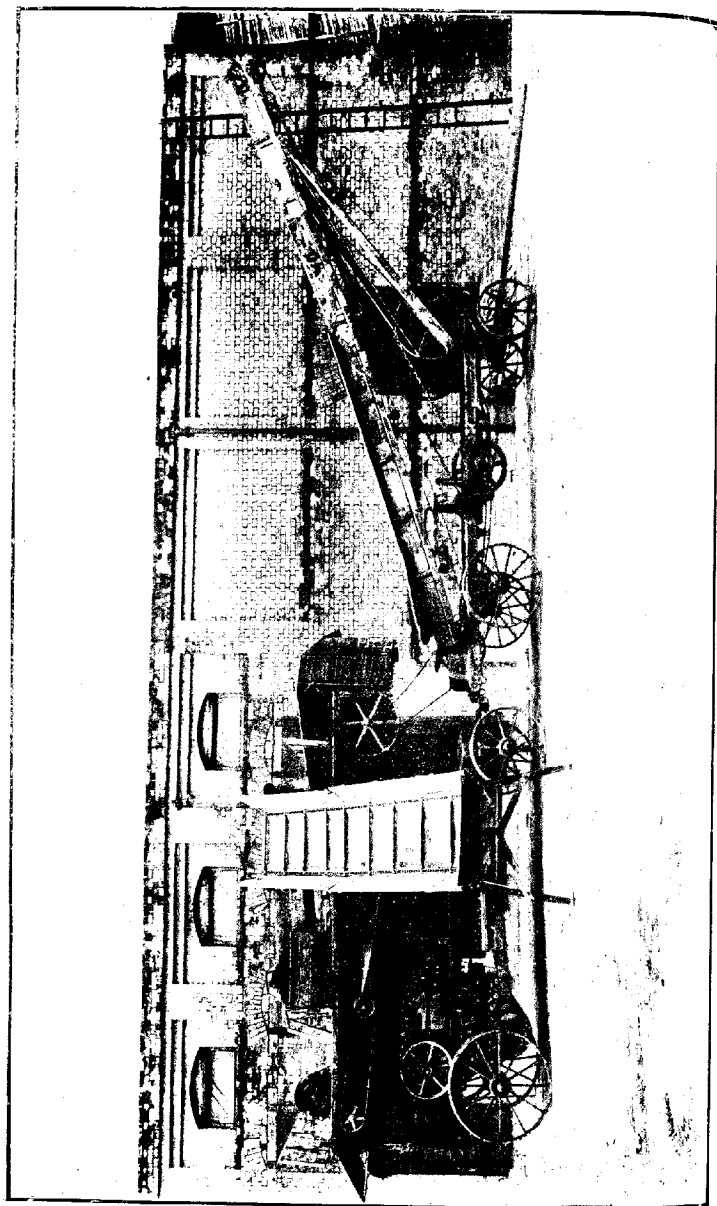
PLATE II.





Allison Self-Feeder, cotton picker.

PLATE IV.



Albion & Co. Traction Machine.

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